

CRF Errors Corrected by the STIC Systems Branch

1600 1632

Serial Number: 09/529,239.0

CRF Processing Date: 11/18/2002
 Edited by:
 Verified by: (STIC staff)

ENTERED

- ☐ Changed a file from non-ASCII to ASCII
- ☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line.
- ☐ Edited a format error in the Current Application Data section, specifically:

- ☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other .
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically:

- ☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:

- ☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included:

- ☐ Deleted extra, invalid, headings used by an applicant, specifically:

- ☐ Deleted: ☐ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as .
- ☒ Inserted mandatory headings, specifically: 42207 in Seqs. 12, 15, 19, 26, 27, 31
- ☐ Corrected an obvious error in the response, specifically:

- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically:

- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Deleted **ending** stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected:
- ☐ Other:

RECEIVED

NOV 25 2002

TECH CENTER 1600/2900

*Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.



1600

RAW SEQUENCE LISTING

DATE: 11/22/2002

PATENT APPLICATION: US/09/529,239C

TIME: 09:49:57

Input Set : N:\Cr4\11182002\I529239B.raw

Output Set: N:\CRF4\11222002\I529239C.raw

1 <110> APPLICANT: Doutriaux, Marie-Pascale
 2 Betzner, Andreas
 3 Freyssinet, Georges
 4 Perez, Pascal
 5 <120> TITLE OF INVENTION: METHOD FOR OBTAINING PLANT VARIETIES
 6 <130> FILE REFERENCE: A33153-PCT-USA 072667.0128
 C--> 7 <140> CURRENT APPLICATION NUMBER: US/09/529,239C
 8 <141> CURRENT FILING DATE: 2000-10-27
 9 <150> PRIOR APPLICATION NUMBER: PCT/EP98/06977
 10 <151> PRIOR FILING DATE: 1998-10-09
 11 <160> NUMBER OF SEQ ID NOS: 103
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 16 <213> ORGANISM: Artificial sequence
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 19 <222> LOCATION: 11
 20 <223> OTHER INFORMATION: I
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 23 <222> LOCATION: 14
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 25 <220> FEATURE:
 26 <221> NAME/KEY: modified_base
 27 <222> LOCATION: 17
 28 <223> OTHER INFORMATION: I
 29 <220> FEATURE:
 30 <223> OTHER INFORMATION: Degenerate oligonucleotides UPMU used to isolate AtMSH3 and
 AtMSH6.
 31 <300> PUBLICATION INFORMATION:
 32 <301> AUTHORS: Reenan and Kolodner
 33 <302> TITLE: Genetics
 34 <303> JOURNAL: 132
 35 <306> PAGES: 963-973
 36 <307> DATE: 1992
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 38 ctggatccac nggnccnaay atg 23
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RAW SEQUENCE LISTING

DATE: 11/22/2002

PATENT APPLICATION: US/09/529,239C

TIME: 09:49:57

Input Set : N:\Crf4\11182002\I529239B.raw

Output Set: N:\CRF4\11222002\I529239C.raw

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 54 <300> PUBLICATION INFORMATION:
 55 <301> AUTHORS: Reenan and Kolodner
 56 <302> TITLE: Genetics
 57 <303> JOURNAL: 132
 58 <306> PAGES: 963-973
 59 <307> DATE: 1992
 60 <400> SEQUENCE: 2
 61 *W-->* ctggatccrt artgngtnrc raa 23
 63 <210> SEQ ID NO: 3
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 65 <212> TYPE: DNA
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 67 <220> FEATURE:
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 69 ecotype Columbia
 70 <400> SEQUENCE: 3
 71 tgctagtgcc tcttgcaagc tcat 24
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 74 <211> LENGTH: 27
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 77 <220> FEATURE:
 78 <223> OTHER INFORMATION: Primer AP1 for PCR using cDNA of Arabidopsis thaliana ecotype
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 79 containing adapter sequences ligated to both its ends
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 88 <223> OTHER INFORMATION: Primer AP2 for PCR using cDNA of Arabidopsis thaliana ecotype
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 95 <212> TYPE: DNA
 96 <213> ORGANISM: Artificial sequence
 97 <220> FEATURE:
 98 <223> OTHER INFORMATION: MSH3 specific primer S525 for PCR using cDNA of Arabidopsis

thaliana

RAW SEQUENCE LISTING

DATE: 11/22/2002

PATENT APPLICATION: US/09/529,239C

TIME: 09:49:57

Input Set : N:\Cr4\11182002\I529239B.raw

Output Set: N:\CRF4\11222002\I529239C.raw

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105 <212> TYPE: DNA
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109      ecotype Columbia
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139      ecotype Columbia
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148 <223> OTHER INFORMATION: MSH3 specific primer S53 for PCR using cDNA of Arabidopsis
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149      ecotype Columbia
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153 <210> SEQ ID NO: 12

RAW SEQUENCE LISTING

DATE: 11/22/2002

PATENT APPLICATION: US/09/529,239C

TIME: 09:49:57

Input Set : N:\Cr4\11182002\I529239B.raw

Output Set: N:\CRF4\11222002\I529239C.raw

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162      gccactgtat ccttctctcc ttccaagcgt aagcttctct cggaccacct cgccgccgcg      180
163      tcacccaaaa agcctaaact ttctcctcac actcaaaacc cagtaccgca tcccaattta      240
164      caccaaagat ttctccagag atttctggaa ccctcgccgg aggaatatgt tcccgaaacg      300
165      tcatcatcga ggaaatacac accattggaa cagcaagtgg tggagctaaa gagcaagtac      360
166      ccagatgtgg ttttgatggt ggaagttggt tacaggtaca gattcttcgg agaagacgcg      420
167      gagatcgag cagcgtgtgt gggatatttac gctcatatgg atcacaattt catgacggcg      480
168      agtgtgccaa catttcgatt gaatttccat gtgagaagac tgggtgaatgc aggatacaag      540
169      attggtgtag tgaagcagac tgaactgca gccattaagt cccatggtgc aaaccggacc      600
170      ggcccttttt tccggggact gtcggcggtt tataccaaag ccacgcttga agcggctgag      660
171      gatataagtg gtggttggtg tgggtgaagaa ggttttggtt cacagagtaa tttcttggtt      720
172      tgtgttggtg atgagagagt taagtcggag acattaggct gtggtattga aatgagtttt      780
173      gatgttagag tcggtgttgt tggcgttgaa atttcgacag gtgaagttgt ttatgaagag      840
174      ttcaatgata atttcatgag aagtggatta gaggtgtgta ttttgagctt gtcaccagct      900
175      gagctgttgc ttggccagcc tctttcaca caaactgaga agtttttggg ggcacatgct      960
176      ggacctacct caaacgttcg agtggaaact gcctcactgg attgtttcag caatggtaat      1020
177      gcagtagatg aggttatattc attatgtgaa aaaatcagcg caggtaactt agaagatgat      1080
178      aaagaaatga agctggaggg tgctgaaaaa ggaatgtctt gcttgacagt tcatacaatt      1140
179      atgaacatgc cacatctgac tgttcaagcc ctgcacctaa cgttttgcca tctcaaacag      1200
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187 <223> OTHER INFORMATION: MSH3 specific primer 2S5 for PCR using cDNA of Arabidopsis
thaliana
188      ecotype Columbia
189 <400> SEQUENCE: 13
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194 <212> TYPE: DNA
195 <213> ORGANISM: Artificial sequence
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197 <223> OTHER INFORMATION: MSH3 specific primer S52 for PCR using cDNA of Arabidopsis
thaliana
198      ecotype Columbia
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203 <211> LENGTH: 2110
204 <212> TYPE: DNA
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RAW SEQUENCE LISTING

DATE: 11/22/2002

PATENT APPLICATION: US/09/529,239C

TIME: 09:49:57

Input Set : N:\Crf4\11182002\I529239B.raw

Output Set: N:\CRF4\11222002\I529239C.raw

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211      tctctcagcc aatactctgc aacagttgga ggttgtgaaa aataattcag atggatcgga      180
212      atctggctcc ttattccata atatgaatca cacacttaca gtatatgggt ccaggttct      240
213      tagacactgg gtgactcatc ctctatgcga tagaaatttg atatctgctc ggcttgatgc      300
214      tgtttctgag atttctgctt gcatgggagc tcatagtctt tcccagctca gcagtgaagt      360
215      ggttgaagaa ggttctgaga gagcaattgt atcacctgag ttttatctcg tgctctctc      420
216      agtcttgaca gctatgtcta gatcatctga tattcaacgt ggaataacaa gaatctttca      480
217      tcggactgct aaagccacag agttcattgc agttatggaa gctattttac ttgcggggaa      540
218      gcaaattcag cggcttggca taaagcaaga ctctgaaatg aggagtatgc aatctgcaac      600
219      tgtgcgatct actcttttga gaaaattgat ttctgttatt tcatccctcg ttgtgggtga      660
220      caatgccgga aaacttctct ctgccctaaa taagggaagcg gctgttcgag gtgacttgct      720
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222      tttagtcata agggaaaagc tggattctc gatagcttca tttcgcaaga agctcgctat      840
223      tcgaaatttg gaatttcttc aagtgtcggg gatcacacat ttgatagagc tgcccggtga      900
224      ttccaaggct cctatgaatt gggtgaaagt aaatagcacc aagaagacta ttcgatatca      960
225      tccccagaa atagtagctg gcttgatga gctagctcta gcaactgaac atcttgccat      1020
226      tgtgaaccga gcttcgtggg atagtttcct caagagtttc agtagatact acacagattt      1080
227      taaggctgcc gttcaagctc ttgctgcaact ggactgtttg cactcccttt caactctatc      1140
228      tagaaacaag aactatgtcc gtcccagatt tgtggatgac tgtgaaccag ttgagataaa      1200
229      catacagtct ggtcgtcatc ctgtactgga gactatatta caagataact tcgtcccaaa      1260
230      tgacacaatt ttgcatgcag aagggaata ttgccaaatt atcacggac ctaacatggg      1320
231      aggaaagagc tgctatatcc gtcaagttgc ttaatttcc ataatggctc aggttgggtc      1380
232      ctttgtacca gcgtcattcg ccaagctgca cgtgcttgat ggtgttttca ctccggatggg      1440
233      tgcttcagac agtatccagc atggcagaag tacctttcta gaagaattaa gtgaagcgtc      1500
234      acacataatc agaacctgtt cttctcgttc gottgttata ttagatgagc ttggaagagg      1560
235      cactagcaca cagcaggtg tagccattgc ctatgcaaca ttacagcatc tcctagcaga      1620
236      aaagagatgt ttggttcttt ttgtcacgca ttacctgaa atagctgaga tcagtaacgg      1680
237      attcccagg tctgttgga cataccatgt ctcgatctg acattgcaga aggataaagg      1740
238      cagttatgat catgatgat tgacctacct atataagctt gtgcgtggtc ttgagcag      1800
239      gagcttgggt ttaaggttg ctgagcttgc ccagatacct ccatcatgta tacgtcagc      1860
240      catttcaatg gctgcaaaat tggaaagctga ggtacgtgca agagagagaa atacacgc      1920
241      gggagaacca gaaggacatg aagaaccgag aggcgcagaa gaatctattt cggtctagg      1980
242      tgacttggtt gcagacctga aatttgcct ctctgaagag gaccttgga aagcattcga      2040
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244      ttgaccggg      2110

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246 <210> SEQ ID NO: 16

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248 <212> TYPE: DNA

249 <213> ORGANISM: Artificial sequence

250 <220> FEATURE:

251 <223> OTHER INFORMATION: MSH3 specific primer S51 for PCR using cDNA of Arabidopsis
thaliana

252 ecotype Columbia

253 <400> SEQUENCE: 16

254 ggatcgggta ctgggttttg agtgtgagg 29

256 <210> SEQ ID NO: 17

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 11/22/2002
PATENT APPLICATION: US/09/529,239C TIME: 09:49:58

Input Set : N:\Crf4\11182002\I529239B.raw
Output Set: N:\CRF4\11222002\I529239C.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; N Pos. 11,14,17
Seq#:2; N Pos. 15,18

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:1; Line(s) 30
Seq#:2; Line(s) 53
Seq#:3; Line(s) 68
Seq#:4; Line(s) 78
Seq#:5; Line(s) 88
Seq#:6; Line(s) 98
Seq#:7; Line(s) 108
Seq#:8; Line(s) 118
Seq#:9; Line(s) 128
Seq#:10; Line(s) 138
Seq#:11; Line(s) 148
Seq#:12; Line(s) 176,177,178,179
Seq#:13; Line(s) 187
Seq#:14; Line(s) 197
Seq#:15; Line(s) 225,226,227,228,229,230,231,232,233,234,235,236,237,238
Seq#:15; Line(s) 239,240,241,242,243
Seq#:16; Line(s) 251
Seq#:17; Line(s) 261
Seq#:18; Line(s) 273,482,483
Seq#:20; Line(s) 635
Seq#:21; Line(s) 645
Seq#:22; Line(s) 654
Seq#:23; Line(s) 664
Seq#:24; Line(s) 674
Seq#:25; Line(s) 684
Seq#:26; Line(s) 712,713,714,715,716,717,718,719,720,721,722,723,724,725
Seq#:26; Line(s) 726,727,728,729,730,731,732
Seq#:27; Line(s) 757,758,759,760,761,762,763
Seq#:28; Line(s) 771
Seq#:29; Line(s) 781
Seq#:30; Line(s) 793,1008,1009
Seq#:32; Line(s) 1165
Seq#:33; Line(s) 1174
Seq#:34; Line(s) 1183
Seq#:35; Line(s) 1193
Seq#:36; Line(s) 1203
Seq#:37; Line(s) 1213

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/529,239C

DATE: 11/22/2002
TIME: 09:49:58

Input Set : N:\CrF4\11182002\I529239B.raw
Output Set: N:\CRF4\11222002\I529239C.raw

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Seq#:84; Line(s) 1693
Seq#:85; Line(s) 1704
Seq#:86; Line(s) 1715

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 11/22/2002
PATENT APPLICATION: US/09/529,239C TIME: 09:49:58

Input Set : N:\Cr4\11182002\I529239B.raw
Output Set: N:\CRF4\11222002\I529239C.raw

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Seq#:96; Line(s) 1817
Seq#:97; Line(s) 1827
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Seq#:98; Line(s) 1954,1955,1956,1957,1958,1959,1960,1961,1962,1963,1964
Seq#:98; Line(s) 1965,1966,1967,1968,1969,1970,1971,1972

VERIFICATION SUMMARY

DATE: 11/22/2002

PATENT APPLICATION: US/09/529,239C

TIME: 09:49:58

Input Set : N:\Crf4\11182002\I529239B.raw

Output Set: N:\CRF4\11222002\I529239C.raw

L:7 M:270 C: Current Application Number differs, Wrong Format
L:38 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
L:61 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0



1600

RAW SEQUENCE LISTING

DATE: 11/22/2002

PATENT APPLICATION: US/09/529,239C

TIME: 09:49:19

Input Set : N:\Cr4\11122002\I529239B.raw

Output Set: N:\CRF4\11222002\I529239C.raw

1 <110> APPLICANT: Doutriaux, Marie-Pascale
 2 Betzner, Andreas
 3 Freyssinet, Georges
 4 Perez, Pascal
 5 <120> TITLE OF INVENTION: METHOD FOR OBTAINING PLANT VARIETIES
 6 <130> FILE REFERENCE: A33153-PCT-USA 072667.0128
 C--> 7 <140> CURRENT APPLICATION NUMBER: US/09/529,239C
 8 <141> CURRENT FILING DATE: 2000-10-27
 9 <150> PRIOR APPLICATION NUMBER: PCT/EP98/06977
 10 <151> PRIOR FILING DATE: 1998-10-09
 11 <160> NUMBER OF SEQ ID NOS: 103

Does Not Comply
 Corrected Diskette Needed

ERRORED SEQUENCES

153 <210> SEQ ID NO: 12
 154 <211> LENGTH: 1250
 155 <212> TYPE: DNA
 156 <213> ORGANISM: Arabidopsis thaliana ecotype Columbia, <220> *Insert this whenever*
 157 <223> OTHER INFORMATION: Clone 52 *2217 or 2227 or 2237*
 E--> 158 <400> SEQUENCE: 12 *is Shinn*

159	cccgggatgg gcaagcaaaa gcagcagacg atttctcggt tcttcgctcc caaacccaaa	60
160	tccccgactc acgaaccgaa tccggtagcc gaatcatcaa caccgccacc gaagatatcc	120
161	gccactgtat ccttctctcc ttccaagcgt aagcttctct ccgaccacct cgccgccgcg	180
162	tcacccaaaa agcctaaact ttctctcac actcaaaacc cagtaccoga tcccaattta	240
163	caccaaagat ttctccagag atttctggaa ccttcgccgg aggaatatgt tcccgaaacg	300
164	tcattcatcga ggaaatacac accattggaa cagcaagtgg tggagctaaa gagcaagtac	360
165	ccagatgtgg ttttgatggg ggaagtggg tacaggtaca gattcttcgg agaagacgcg	420
166	gagatcgacg cagcggtgtt gggatattac gctcatatgg atcacaattt catgacggcg	480
167	agtgtgccaa catttcgatt gaatttccat gtgagaagac tggatgaatgc aggatacaag	540
168	attggtgtag tgaagcagac tgaactgca gccattaagt cccatgggtgc aaaccggacc	600
169	ggcccttttt tccggggact gtcggcggtg tataccaaag ccacgcttga agcggctgag	660
170	gatataagtg gtggttgggg tggatgaaga ggttttgggt cacagagtaa tttcttgggt	720
171	tgtgttgggg atgagagagt taagtcggag acattaggct gtggtattga aatgagtttt	780
172	gatgttagag tcggtgttgt tggcggtgaa atttcgacag gtgaagttgt ttatgaagag	840
173	ttcaatgata atttcatgag aagtggatta gaggctgtga ttttgagctt gtcaccagct	900
174	gagctgttgc ttggccagcc tctttcacia caaactgaga agtttttggg ggcacatgct	960
175	ggacctacct caaacgttcg agtggaaact gcctcactgg attgtttcag caatggtaat	1020
176	gcagtagatg aggttatttc attatgtgaa aaaatcagcg caggtaactt agaagatgat	1080
177	aaagaaatga agctggaggc tgctgaaaaa ggaatgtctt gcttgacagt tcatacaatt	1140
178	atgaacatgc cacatctgac tgttcaagcc ctgcgcctaa cgtttttgcca tctcaaacag	1200
179	tttgatttgg aaaggatcct ttaccaaggg gcctcatttc gctctttgtc	1250
201	<210> SEQ ID NO: 15	

RAW SEQUENCE LISTING

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Output Set: N:\CRF4\11222002\I529239C.raw

202 <211> LENGTH: 2110

203 <212> TYPE: DNA

204 <213> ORGANISM: Arabidopsis thaliana ecotype Columbia

205 <223> OTHER INFORMATION: Clone 13

E--> 206 <400> SEQUENCE: 15

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 208 tgaaaggatc ctttaccacg gggcctcatt tcgctctttg tcaagtaaca cagagatgac 120
 209 tctctcagcc aatactctgc aacagttgga ggttgtgaaa aataattcag atggatcgga 180
 210 atctggctcc ttattccata atatgaatca cacacttaca gtatatgggt ccaggcttct 240
 211 tagacactgg gtgactcatc ctctatgcga tagaaatttg atatctgctc ggcttgatgc 300
 212 tgtttctgag atttctgctt gcatgggac tcatagttct tcccagctca gcagtgaagt 360
 213 ggttgaagaa ggttctgaga gagcaattgt atcacctgag ttttatctcg tgcctctctc 420
 214 agtcttgaca gctatgtcta gatcatctga tattcaacgt ggaataacaa gaatctttca 480
 215 tcggactgct aaagccacag agttcattgc agttatggaa gctattttac ttgcggggaa 540
 216 gcaaatccag cggcttggca taaagcaaga ctctgaaatg aggagtatgc aatctgcaac 600
 217 tgtgcgatct actcttttga gaaaattgat ttctgttatt tcatccctcg ttgtggttga 660
 218 caatgccgga aaacttctct ctgccctaaa taaggaagcg gctgttcgag gtgacttget 720
 219 cgacatacta atcacttcca gcgaccaatt tcctgagctt gctgaagctc gccaaagcag 780
 220 tttagtcacg agggaaaagc tggattcctc gatagcttca tttcgcaaga agctcgctat 840
 221 tcgaaatttg gaatttcttc aagtgtcggg gatcacacat ttgatagagc tgcccgttga 900
 222 ttccaagggt cctatgaatt gggtgaaagt aaatagcacc aagaagacta ttcgatatca 960
 223 tccccagaa atagtagctg gcttggatga gctagctcta gcaactgaac atcttgccat 1020
 224 tgtgaaccga gcttcgtggg atagtcttct caagagtttc agtagatact acacagattt 1080
 225 taaggctgcc gttcaagctc ttgctgcaat ggactgtttg cactcccttt caactctatc 1140
 226 tagaaacaag aactatgtcc gtcccagatt tgtggatgac tgtgaaccag ttgagataaa 1200
 227 catacagtct ggtcgtcatc ctgtactgga gactatatta caagataact tcgtcccaaa 1260
 228 tgacacaatt ttgcatgcag aaggggaata ttgccaaatt atcaccggac ctaacatggg 1320
 229 aggaaagagc tgctatatcc gtcaagttgc tttaatttcc ataattggctc aggttgggtc 1380
 230 ctttgtacca gcgtcattcg ccaagctgca cgtgcttgat ggtgttttca ctcggaatgg 1440
 231 tgcttcagac agtatccagc atggcagaag tacctttcta gaagaattaa gtgaagcgtc 1500
 232 acacataatc agaacctgtt cttctcgttc gcttgttata ttagatgagc ttggaagagg 1560
 233 cactagcaca cagcaggtg tagccattgc ctatgcaaca ttacagcatc tctagcaga 1620
 234 aaagagatgt ttggttcttt ttgtcacgca ttaccctgaa atagctgaga tcagtaacgg 1680
 235 attcccaggt tctgttggga cataccatgt ctctatctg acattgcaga aggataaagg 1740
 236 cagttatgat catgatgatg tgacctacct atataagctt gtgcgtgggtc tttgcagcag 1800
 237 gagctttggt tttaaggttg ctacagctgc ccagatacct ccatcatgta tacgtcagac 1860
 238 catttcaatg gctgcaaaat tggaagctga ggtacgtgca agagagagaa atacacgcac 1920
 239 gggagaacca gaaggacatg aagaaccgag aggcgcagaa gaatctattt cggctctagg 1980
 240 tgacttgttt gcagacctga aatttgcctc ctctgaagag gacccttggg aagcattcga 2040
 241 gtttttaaa catgcttggg agattgctgg caaaatcaga ctaaaaccaa cttgttcatt 2100
 242 ttgaccggg 2110

483 <210> SEQ ID NO: 19

484 <211> LENGTH: 1081

485 <212> TYPE: PRT

486 <213> ORGANISM: Arabidopsis thaliana ecotype Columbia

487 <223> OTHER INFORMATION: Polypeptide MSH3

E--> 488 <400> SEQUENCE: 19

489 Met Gly Lys Gln Lys Gln Gln Thr Ile Ser Arg Phe Phe Ala Pro Lys
 490 1 5 10 15

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492                20                      25                      30
493      Pro Pro Pro Lys Ile Ser Ala Thr Val Ser Phe Ser Pro Ser Lys Arg
494                35                      40                      45
495      Lys Leu Leu Ser Asp His Leu Ala Ala Ala Ser Pro Lys Lys Pro Lys
496                50                      55                      60
497      Leu Ser Pro His Thr Gln Asn Pro Val Pro Asp Pro Asn Leu His Gln
498                65                      70                      75                      80
499      Arg Phe Leu Gln Arg Phe Leu Glu Pro Ser Pro Glu Glu Tyr Val Pro
500                85                      90                      95
501      Glu Thr Ser Ser Ser Arg Lys Tyr Thr Pro Leu Glu Gln Gln Val Val
502                100                     105                     110
503      Glu Leu Lys Ser Lys Tyr Pro Asp Val Val Leu Met Val Glu Val Gly
504                115                     120                     125
505      Tyr Arg Tyr Arg Phe Phe Gly Glu Asp Ala Glu Ile Ala Ala Arg Val
506                130                     135                     140
507      Leu Gly Ile Tyr Ala His Met Asp His Asn Phe Met Thr Ala Ser Val
508                145                     150                     155                     160
509      Pro Thr Phe Arg Leu Asn Phe His Val Arg Arg Leu Val Asn Ala Gly
510                165                     170                     175
511      Tyr Lys Ile Gly Val Val Lys Gln Thr Glu Thr Ala Ala Ile Lys Ser
512                180                     185                     190
513      His Gly Ala Asn Arg Thr Gly Pro Phe Phe Arg Gly Leu Ser Ala Leu
514                195                     200                     205
515      Tyr Thr Lys Ala Thr Leu Glu Ala Ala Glu Asp Ile Ser Gly Gly Cys
516                210                     215                     220
517      Gly Gly Glu Glu Gly Phe Gly Ser Gln Ser Asn Phe Leu Val Cys Val
518                225                     230                     235                     240
519      Val Asp Glu Arg Val Lys Ser Glu Thr Leu Gly Cys Gly Ile Glu Met
520                245                     250                     255
521      Ser Phe Asp Val Arg Val Gly Val Val Gly Val Glu Ile Ser Thr Gly
522                260                     265                     270
523      Glu Val Val Tyr Glu Glu Phe Asn Asp Asn Phe Met Arg Ser Gly Leu
524                275                     280                     285
525      Glu Ala Val Ile Leu Ser Leu Ser Pro Ala Glu Leu Leu Leu Gly Gln
526                290                     295                     300
527      Pro Leu Ser Gln Gln Thr Glu Lys Phe Leu Val Ala Met Ala Gly Pro
528                305                     310                     315                     320
529      Thr Ser Asn Val Arg Val Glu Arg Ala Ser Leu Asp Cys Phe Ser Asn
530                325                     330                     335
531      Gly Asn Ala Val Asp Glu Val Ile Ser Leu Cys Glu Lys Ile Ser Ala
532                340                     345                     350
533      Gly Asn Leu Glu Asp Asp Lys Glu Met Lys Leu Glu Ala Ala Glu Lys
534                355                     360                     365
535      Gly Met Ser Cys Leu Thr Val His Thr Ile Met Asn Met Pro His Leu
536                370                     375                     380
537      Thr Val Gln Ala Leu Ala Leu Thr Phe Cys His Leu Lys Gln Phe Gly
538                385                     390                     395                     400
539      Phe Glu Arg Ile Leu Tyr Gln Gly Ala Ser Phe Arg Ser Leu Ser Ser

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540				405				410				415				
541	Asn	Thr	Glu	Met	Thr	Leu	Ser	Ala	Asn	Thr	Leu	Gln	Gln	Leu	Glu	Val
542				420				425				430				
543	Val	Lys	Asn	Asn	Ser	Asp	Gly	Ser	Glu	Ser	Gly	Ser	Leu	Phe	His	Asn
544			435					440				445				
545	Met	Asn	His	Thr	Leu	Thr	Val	Tyr	Gly	Ser	Arg	Leu	Leu	Arg	His	Trp
546		450					455					460				
547	Val	Thr	His	Pro	Leu	Cys	Asp	Arg	Asn	Leu	Ile	Ser	Ala	Arg	Leu	Asp
548	465					470					475					480
549	Ala	Val	Ser	Glu	Ile	Ser	Ala	Cys	Met	Gly	Ser	His	Ser	Ser	Ser	Gln
550				485					490							495
551	Leu	Ser	Ser	Glu	Leu	Val	Glu	Glu	Gly	Ser	Glu	Arg	Ala	Ile	Val	Ser
552			500					505					510			
553	Pro	Glu	Phe	Tyr	Leu	Val	Leu	Ser	Ser	Val	Leu	Thr	Ala	Met	Ser	Arg
554			515					520					525			
555	Ser	Ser	Asp	Ile	Gln	Arg	Gly	Ile	Thr	Arg	Ile	Phe	His	Arg	Thr	Ala
556		530					535					540				
557	Lys	Ala	Thr	Glu	Phe	Ile	Ala	Val	Met	Glu	Ala	Ile	Leu	Leu	Ala	Gly
558	545					550				555						560
559	Lys	Gln	Ile	Gln	Arg	Leu	Gly	Ile	Lys	Gln	Asp	Ser	Glu	Met	Arg	Ser
560				565				570								575
561	Met	Gln	Ser	Ala	Thr	Val	Arg	Ser	Thr	Leu	Leu	Arg	Lys	Leu	Ile	Ser
562			580					585						590		
563	Val	Ile	Ser	Ser	Pro	Val	Val	Val	Asp	Asn	Ala	Gly	Lys	Leu	Leu	Ser
564		595					600						605			
565	Ala	Leu	Asn	Lys	Glu	Ala	Ala	Val	Arg	Gly	Asp	Leu	Leu	Asp	Ile	Leu
566		610					615				620					
567	Ile	Thr	Ser	Ser	Asp	Gln	Phe	Pro	Glu	Leu	Ala	Glu	Ala	Arg	Gln	Ala
568	625					630					635					640
569	Val	Leu	Val	Ile	Arg	Glu	Lys	Leu	Asp	Ser	Ser	Ile	Ala	Ser	Phe	Arg
570				645				650								655
571	Lys	Lys	Leu	Ala	Ile	Arg	Asn	Leu	Glu	Phe	Leu	Gln	Val	Ser	Gly	Ile
572				660				665								670
573	Thr	His	Leu	Ile	Glu	Leu	Pro	Val	Asp	Ser	Lys	Val	Pro	His	Asn	Trp
574		675						680					685			
575	Val	Lys	Val	Asn	Ser	Thr	Lys	Lys	Thr	Ile	Arg	Tyr	His	Pro	Pro	Glu
576		690					695					700				
577	Ile	Val	Ala	Gly	Leu	Asp	Glu	Leu	Ala	Leu	Ala	Thr	Glu	His	Leu	Ala
578	705					710					715					720
579	Ile	Val	Asn	Arg	Ala	Ser	Trp	Asp	Ser	Phe	Leu	Lys	Ser	Phe	Ser	Arg
580				725				730								735
581	Tyr	Tyr	Thr	Asp	Phe	Lys	Ala	Ala	Val	Gln	Ala	Leu	Ala	Ala	Leu	Asp
582				740				745								750
583	Cys	Leu	His	Ser	Leu	Ser	Thr	Leu	Ser	Arg	Asn	Lys	Asn	Tyr	Val	Arg
584			755					760					765			
585	Pro	Glu	Phe	Val	Asp	Asp	Cys	Glu	Pro	Val	Glu	Ile	Asn	Ile	Gln	Ser
586		770					775					780				
587	Gly	Arg	His	Pro	Val	Leu	Glu	Thr	Ile	Leu	Gln	Asp	Asn	Phe	Val	Pro
588	785					790					795					800

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589   Asn Asp Thr Ile Leu His Ala Glu Gly Glu Tyr Cys Gln Ile Ile Thr
590               805                      810                      815
591   Gly Pro Asn Met Gly Gly Lys Ser Cys Tyr Ile Arg Gln Val Ala Leu
592               820                      825                      830
593   Ile Ser Ile Met Ala Gln Val Gly Ser Phe Val Pro Ala Ser Phe Ala
594               835                      840                      845
595   Lys Leu His Val Leu Asp Gly Val Phe Thr Arg Met Gly Ala Ser Asp
596               850                      855                      860
597   Ser Ile Gln His Gly Arg Ser Thr Phe Leu Glu Glu Leu Ser Glu Ala
598   865                      870                      875                      880
599   Ser His Ile Ile Arg Thr Cys Ser Ser Arg Ser Leu Val Ile Leu Asp
600               885                      890                      895
601   Glu Leu Gly Arg Gly Thr Ser Thr His Asp Gly Val Ala Ile Ala Tyr
602               900                      905                      910
603   Ala Thr Leu Gln His Leu Leu Ala Glu Lys Arg Cys Leu Val Leu Phe
604               915                      920                      925
605   Val Thr His Tyr Pro Glu Ile Ala Glu Ile Ser Asn Gly Phe Pro Gly
606               930                      935                      940
607   Ser Val Gly Thr Tyr His Val Ser Tyr Leu Thr Leu Gln Lys Asp Lys
608   945                      950                      955                      960
609   Gly Ser Tyr Asp His Asp Asp Val Thr Tyr Leu Tyr Lys Leu Val Arg
610               965                      970                      975
611   Gly Leu Cys Ser Arg Ser Phe Gly Phe Lys Val Ala Gln Leu Ala Gln
612               980                      985                      990
613   Ile Pro Pro Ser Cys Ile Arg Arg Ala Ile Ser Met Ala Ala Lys Leu
614               995                      1000                      1005
615   Glu Ala Glu Val Arg Ala Arg Glu Arg Asn Thr Arg Met Gly Glu Pro
616   1010                      1015                      1020
617   Glu Gly His Glu Glu Pro Arg Gly Ala Glu Glu Ser Ile Ser Ala Leu
618   1025                      1030                      1035                      1040
619   Gly Asp Leu Phe Ala Asp Leu Lys Phe Ala Leu Ser Glu Glu Asp Pro
620               1045                      1050                      1055
621   Trp Lys Ala Phe Glu Phe Leu Lys His Ala Trp Lys Ile Ala Gly Lys
622               1060                      1065                      1070
623   Ile Arg Leu Lys Pro Thr Cys Ser Phe
624               1075                      1080

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685 <210> SEQ ID NO: 26

686 <211> LENGTH: 2188

687 <212> TYPE: DNA

688 <213> ORGANISM: Arabidopsis thaliana ecotype Columbia

689 <223> OTHER INFORMATION: Clone 43

Same

E--> 690 <400> SEQUENCE: 26

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692   acgaagggtt tggtttccgg cgatgctgct agcggcgggg ggcgcagcgg aggaccacga      120
693   tttaatgtga aggaaggga tgctaaaggc gacgcttctg tacgttttgc tgtttcgaaa      180
694   tctgtcgatg aggttagagg aacggatact ccaccggaga aggttccgcg tcgtgtcctg      240
695   ccgtctggat ttaagccggc tgaatccgcc ggtgatgctt cgtccctgtt ctccaatatt      300
696   atgcataagt ttgtaaaagt cgatgatcga gattgttctg gagagaggag ccgagaagat      360
697   gttgttccgc tgaatgattc atctctatgt atgaaggcta atgatgttat tcctcaattt      420

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Output Set: N:\CRF4\11222002\I529239C.raw

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699	gaacttagat	cagtagaaga	tataggagta	gatggcgatg	ttcctgggtcc	agaaacacca	540
700	gggatgcgtc	cacgtgcttc	tcgcttgaag	cgagttctgg	aggatgaaat	gacttttaag	600
701	gaggataagg	ttcctgtatt	ggactctaac	aaaaggctga	aatgctcca	ggatccggtt	660
702	tgtggagaga	agaaagaagt	aaacgaagga	accaaatttg	aatggcttga	gtcttctcga	720
703	atcagggatg	ccaatagaag	acgtcctgat	gatccccctt	acgatagaaa	gaccttacac	780
704	ataccacctg	atgttttcaa	gaaaatgtct	gcatacacia	agcaatattg	gagtgttaag	840
705	agtgaatata	tggacattgt	gcttttcttt	aaagtgggga	aattttatga	gctgtatgag	900
706	ctagatgcgg	aattaggtca	caaggagctt	gactggaaga	tgacctgag	tggtgtggga	960
707	aaatgcagac	aggttggtat	ctctgaaagt	gggatagatg	aggcagtgc	aaagctatta	1020
708	gctcgtggat	ataaagttgg	acgaatcgag	cagctagaaa	catctgacca	agcaaaagcc	1080
709	agaggtgcta	atactataat	tccaaggaag	ctagttcagg	tattaactcc	atcaacagca	1140
710	agcgagggaa	acatcgggcc	tgatgccgtc	catcttcttg	ctataaaaga	gatcaaaatg	1200
711	gagctacaaa	agtgttcaac	tgtgtatgga	tttgcttttg	ttgactgtgc	tgcttgagg	1260
712	ttttgggttg	ggtccatcag	cgatgatgca	tcatgtgctg	ctcttgagc	gttattgatg	1320
713	caggtttctc	caaaggaagt	gttatatgac	agtaaagggc	tatcaagaga	agcacaaaag	1380
714	gctctaagga	aatatacggt	gacagggtct	acggcggtac	agttggctcc	agtaccacaa	1440
715	gtaatggggg	atacagatgc	tgctggagtt	agaaatataa	tagaatctaa	cggatacttt	1500
716	aaaggttctt	ctgaatcatg	gaactgtgct	gttgatggtc	taaatgaatg	tgatgttgcc	1560
717	cttagtgctc	ttggagagct	aattaatcat	ctgtctaggc	taaagctaga	agatgtactt	1620
718	aagcatgggg	atatttttcc	ataccaagtt	tacaggggtt	gtctcagaat	tgatggccag	1680
719	acgatggtaa	atcttgagat	atttaacaat	agctgtgatg	gtggctcttc	agggaccttg	1740
720	tacaaatata	ttgataactg	tgtagtcca	actggtgaagc	gactcttaag	gaattggatc	1800
721	tgccatccac	tcaaagatgt	agaaagcatc	aataaacggc	ttgatgtagt	tgaagaattc	1860
722	acggcaaact	cagaaagtat	gcaaactcat	ggccagtatc	tccacaaact	tccagactta	1920
723	gaaagactgc	tcggacgcac	caagtctagc	gttcgatcat	cagcctctgt	gttgctgct	1980
724	cttctgggga	aaaaagtgtc	gaaacaacga	gttaagcat	ttgggcaa	tggtgaaagg	2040
725	ttcagaagtg	gaattgatct	gttggtggct	ctacagaagg	aatcaaatat	gatgagtttg	2100
726	ctttataaac	tctgtaaaact	tcttatatta	gtaggaaaaa	gcgggctaga	gttatttctt	2160
727	tctcaattcg	aagcagccat	agatagcg				2188

729 <210> SEQ ID NO: 27

730 <211> LENGTH: 1385

731 <212> TYPE: DNA

732 <213> ORGANISM: Arabidopsis thaliana ecotype Columbia

733 <223> OTHER INFORMATION: Clone 62

E--> 734 <400> SEQUENCE: 27

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736	catttgggca	aattgtgaaa	gggttcagaa	gtggaattga	tctgttggtg	gctctacaga	120
737	aggaatcaaa	tatgatgagt	ttgctttata	aactctgtaa	acttcttata	ttagtaggaa	180
738	aaagcgggct	agagttattt	ctttctcaat	tcgaagcagc	catagatagc	gactttccaa	240
739	attatcagaa	ccaagatgtg	acagatgaaa	acgctgaaac	tctcacaata	cttatcgaac	300
740	tttttatcga	aagagcaact	caatggctgc	aggtcattca	caccataagc	tgcttagatg	360
741	tcttgagatc	ttttgcaatc	gcagcaagtc	tctctgctgg	aagcatggcc	aggcctgtta	420
742	tttttcccga	atcagaagct	acagatcaga	atcagaaaac	aaaagggcc	atacttaaaa	480
743	tccaaggact	atggcatcca	tttgcagttg	cagccgatgg	tcaattgcct	gttccgaatg	540
744	atatactcct	tggcgaggct	agaagaagca	gtggcagcat	tcatactcgg	tcattgttac	600
745	tgacgggacc	aaacatgggc	ggaaaatcaa	ctcttcttcg	tgcaacatgt	ctggccgtta	660
746	tctttgccca	acttggtctg	tacgtgccgt	gtgagtcctg	cgaaatctcc	ctcgtggata	720
747	ctatcttcac	aaggcttggc	gcactctgata	gaatcatgac	aggagagagt	accttttttg	780

Summe

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749      ttgacgaact gggcagagga actagtactt tcgatggata cgccattgca tactcggttt      900
750      ttcgtcacct ggtagagaaa gttcaatgtc ggatgctctt tgcaacacat taccaccctc      960
751      tcaccaagga attcgcgtct caccacgtg tcacctcgaa acacatggct tgcgcattca      1020
752      aatcaagatc tgattatcaa ccacgtgggt gtgatcaaga cctagtgttc ttgtaccggt      1080
753      taaccgaggg agcttgtcct gagagctacg gacttcaagt ggcactcatg gctggaatac      1140
754      caaaccaagt ggttgaaaca gcatcagggt ctgctcaagc catgaagaga tcaattgggg      1200
755      aaaacttcaa gtcaagttag ctaagatctg agttctcaag tctgcatgaa gactggctca      1260
756      agtcattggg gggatattct cgagtcgccc acaacaatgc cccattggc gaagatgact      1320
757      acgacacttt gttttgctta tggcatgaga tcaaatcttc ttactgtgtt cccaaataac      1380
758      ccggg                                     1385

1005 <210> SEQ ID NO: 31
1006 <211> LENGTH: 1109
1007 <212> TYPE: PRT
1008 <213> ORGANISM: Arabidopsis thaliana ecotype Columbia
1009 <223> OTHER INFORMATION: Polypeptide MSH6
E--> 1010 <400> SEQUENCE: 31
1011      Met Gln Arg Gln Arg Ser Ile Leu Ser Phe Phe Gln Lys Pro Thr Ala
1012           1                5                10                15
1013      Ala Thr Thr Lys Gly Leu Val Ser Gly Asp Ala Ala Ser Gly Gly Gly
1014           20                25                30
1015      Gly Ser Gly Gly Pro Arg Phe Asn Val Arg Glu Gly Asp Ala Lys Gly
1016           35                40                45
1017      Asp Ala Ser Val Arg Phe Ala Val Ser Lys Ser Val Asp Glu Val Arg
1018           50                55                60
1019      Gly Thr Asp Thr Pro Pro Glu Lys Val Pro Arg Arg Val Leu Pro Ser
1020           65                70                75                80
1021      Gly Phe Lys Pro Ala Glu Ser Ala Gly Asp Ala Ser Ser Leu Phe Ser
1022           85                90                95
1023      Asn Ile Met His Lys Phe Val Lys Val Asp Asp Arg Asp Cys Ser Gly
1024           100               105               110
1025      Glu Arg Ser Arg Glu Asp Val Val Pro Leu Asn Asp Ser Ser Leu Cys
1026           115               120               125
1027      Met Lys Ala Asn Asp Val Ile Pro Gln Phe Arg Ser Asn Asn Gly Lys
1028           130               135               140
1029      Thr Gln Glu Arg Asn His Ala Phe Ser Phe Ser Gly Arg Ala Glu Leu
1030           145               150               155               160
1031      Arg Ser Val Glu Asp Ile Gly Val Asp Gly Asp Val Pro Gly Pro Glu
1032           165               170               175
1033      Thr Pro Gly Met Arg Pro Arg Ala Ser Arg Leu Lys Arg Val Leu Glu
1034           180               185               190
1035      Asp Glu Met Thr Phe Lys Glu Asp Lys Val Pro Val Leu Asp Ser Asn
1036           195               200               205
1037      Lys Arg Leu Lys Met Leu Gln Asp Pro Val Cys Gly Glu Lys Lys Glu
1038           210               215               220
1039      Val Asn Glu Gly Thr Lys Phe Glu Trp Leu Glu Ser Ser Arg Ile Arg
1040           225               230               235               240
1041      Asp Ala Asn Arg Arg Arg Pro Asp Asp Pro Leu Tyr Asp Arg Lys Thr
1042           245               250               255

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RAW SEQUENCE LISTING

DATE: 11/22/2002

PATENT APPLICATION: US/09/529,239C

TIME: 09:49:19

Input Set : N:\CrF4\11122002\I529239B.raw

Output Set: N:\CRF4\11222002\I529239C.raw

1043	Leu	His	Ile	Pro	Pro	Asp	Val	Phe	Lys	Lys	Met	Ser	Ala	Ser	Gln	Lys
1044				260					265					270		
1045	Gln	Tyr	Trp	Ser	Val	Lys	Ser	Glu	Tyr	Met	Asp	Ile	Val	Leu	Phe	Phe
1046			275					280					285			
1047	Lys	Val	Gly	Lys	Phe	Tyr	Glu	Leu	Tyr	Glu	Leu	Asp	Ala	Glu	Leu	Gly
1048			290				295					300				
1049	His	Lys	Glu	Leu	Asp	Trp	Lys	Met	Thr	Met	Ser	Gly	Val	Gly	Lys	Cys
1050	305					310					315					320
1051	Arg	Gln	Val	Gly	Ile	Ser	Glu	Ser	Gly	Ile	Asp	Glu	Ala	Val	Gln	Lys
1052				325						330					335	
1053	Leu	Leu	Ala	Arg	Gly	Tyr	Lys	Val	Gly	Arg	Ile	Glu	Gln	Leu	Glu	Thr
1054			340						345					350		
1055	Ser	Asp	Gln	Ala	Lys	Ala	Arg	Gly	Ala	Asn	Thr	Ile	Ile	Pro	Arg	Lys
1056			355					360					365			
1057	Leu	Val	Gln	Val	Leu	Thr	Pro	Ser	Thr	Ala	Ser	Glu	Gly	Asn	Ile	Gly
1058			370				375					380				
1059	Pro	Asp	Ala	Val	His	Leu	Leu	Ala	Ile	Lys	Glu	Ile	Lys	Met	Glu	Leu
1060	385					390					395					400
1061	Gln	Lys	Cys	Ser	Thr	Val	Tyr	Gly	Phe	Ala	Phe	Val	Asp	Cys	Ala	Ala
1062				405						410					415	
1063	Leu	Arg	Phe	Trp	Val	Gly	Ser	Ile	Ser	Asp	Asp	Ala	Ser	Cys	Ala	Ala
1064			420						425					430		
1065	Leu	Gly	Ala	Leu	Leu	Met	Gln	Val	Ser	Pro	Lys	Glu	Val	Leu	Tyr	Asp
1066			435				440					445				
1067	Ser	Lys	Gly	Leu	Ser	Arg	Glu	Ala	Gln	Lys	Ala	Leu	Arg	Lys	Tyr	Thr
1068			450				455					460				
1069	Leu	Thr	Gly	Ser	Thr	Ala	Val	Gln	Leu	Ala	Pro	Val	Pro	Gln	Val	Met
1070	465					470					475					480
1071	Gly	Asp	Thr	Asp	Ala	Ala	Gly	Val	Arg	Asn	Ile	Ile	Glu	Ser	Asn	Gly
1072				485						490					495	
1073	Tyr	Phe	Lys	Gly	Ser	Ser	Glu	Ser	Trp	Asn	Cys	Ala	Val	Asp	Gly	Leu
1074			500						505					510		
1075	Asn	Glu	Cys	Asp	Val	Ala	Leu	Ser	Ala	Leu	Gly	Glu	Leu	Ile	Asn	His
1076			515					520					525			
1077	Leu	Ser	Arg	Leu	Lys	Leu	Glu	Asp	Val	Leu	Lys	His	Gly	Asp	Ile	Phe
1078			530				535					540				
1079	Pro	Tyr	Gln	Val	Tyr	Arg	Gly	Cys	Leu	Arg	Ile	Asp	Gly	Gln	Thr	Met
1080	545					550					555					560
1081	Val	Asn	Leu	Glu	Ile	Phe	Asn	Asn	Ser	Cys	Asp	Gly	Gly	Pro	Ser	Gly
1082				565						570					575	
1083	Thr	Leu	Tyr	Lys	Tyr	Leu	Asp	Asn	Cys	Val	Ser	Pro	Thr	Gly	Lys	Arg
1084			580						585					590		
1085	Leu	Leu	Arg	Asn	Trp	Ile	Cys	His	Pro	Leu	Lys	Asp	Val	Glu	Ser	Ile
1086			595					600					605			
1087	Asn	Lys	Arg	Leu	Asp	Val	Val	Glu	Glu	Phe	Thr	Ala	Asn	Ser	Glu	Ser
1088			610				615					620				
1089	Met	Gln	Ile	Thr	Gly	Gln	Tyr	Leu	His	Lys	Leu	Pro	Asp	Leu	Glu	Arg
1090	625					630					635					640
1091	Leu	Leu	Gly	Arg	Ile	Lys	Ser	Ser	Val	Arg	Ser	Ser	Ala	Ser	Val	Leu

RAW SEQUENCE LISTING

DATE: 11/22/2002

PATENT APPLICATION: US/09/529,239C

TIME: 09:49:19

Input Set : N:\Cr4\11122002\I529239B.raw

Output Set: N:\CRF4\11222002\I529239C.raw

1092					645					650				655
1093	Pro	Ala	Leu	Leu	Gly	Lys	Lys	Val	Leu	Lys	Gln	Arg	Val	Lys
1094					660					665				670
1095	Gly	Gln	Ile	Val	Lys	Gly	Phe	Arg	Ser	Gly	Ile	Asp	Leu	Leu
1096					675					680				685
1097	Leu	Gln	Lys	Glu	Ser	Asn	Met	Met	Ser	Leu	Leu	Tyr	Lys	Leu
1098					690					695				700
1099	Leu	Pro	Ile	Leu	Val	Gly	Lys	Ser	Gly	Leu	Glu	Leu	Phe	Leu
1100					705					710				715
1101	Phe	Glu	Ala	Ala	Ile	Asp	Ser	Asp	Phe	Pro	Asn	Tyr	Gln	Asn
1102					725					730				735
1103	Val	Thr	Asp	Glu	Asn	Ala	Glu	Thr	Leu	Thr	Ile	Leu	Ile	Glu
1104					740					745				750
1105	Ile	Glu	Arg	Ala	Thr	Gln	Trp	Ser	Glu	Val	Ile	His	Thr	Ile
1106					755					760				765
1107	Leu	Asp	Val	Leu	Arg	Ser	Phe	Ala	Ile	Ala	Ala	Ser	Leu	Ser
1108					770					775				780
1109	Ser	Met	Ala	Arg	Pro	Val	Ile	Phe	Pro	Glu	Ser	Glu	Ala	Thr
1110					785					790				795
1111	Asn	Gln	Lys	Thr	Lys	Gly	Pro	Ile	Leu	Lys	Ile	Gln	Gly	Leu
1112					805					810				815
1113	Pro	Phe	Ala	Val	Ala	Ala	Asp	Gly	Gln	Leu	Pro	Val	Pro	Asn
1114					820					825				830
1115	Leu	Leu	Gly	Glu	Ala	Arg	Arg	Ser	Ser	Gly	Ser	Ile	His	Pro
1116					835					840				845
1117	Leu	Leu	Leu	Thr	Gly	Pro	Asn	Met	Gly	Gly	Lys	Ser	Thr	Leu
1118					850					855				860
1119	Ala	Thr	Cys	Leu	Ala	Val	Ile	Phe	Ala	Gln	Leu	Gly	Cys	Tyr
1120					865					870				875
1121	Cys	Glu	Ser	Cys	Glu	Ile	Ser	Leu	Val	Asp	Thr	Ile	Phe	Thr
1122					885					890				895
1123	Gly	Ala	Ser	Asp	Arg	Ile	Met	Thr	Gly	Glu	Ser	Thr	Phe	Leu
1124					900					905				910
1125	Cys	Thr	Glu	Thr	Ala	Ser	Val	Leu	Gln	Asn	Ala	Thr	Gln	Asp
1126					915					920				925
1127	Val	Ile	Leu	Asp	Glu	Leu	Gly	Arg	Gly	Thr	Ser	Thr	Phe	Asp
1128					930					935				940
1129	Ala	Ile	Ala	Tyr	Ser	Val	Phe	Arg	His	Leu	Val	Glu	Lys	Val
1130					945					950				955
1131	Arg	Met	Leu	Phe	Ala	Thr	His	Tyr	His	Pro	Leu	Thr	Lys	Glu
1132					965					970				975
1133	Ser	His	Pro	Arg	Val	Thr	Ser	Lys	His	Met	Ala	Cys	Ala	Phe
1134					980					985				990
1135	Arg	Ser	Asp	Tyr	Gln	Pro	Arg	Gly	Cys	Asp	Gln	Asp	Leu	Val
1136					995					1000				1005
1137	Tyr	Arg	Leu	Thr	Glu	Gly	Ala	Cys	Pro	Glu	Ser	Tyr	Gly	Leu
1138					1010					1015				1020
1139	Ala	Leu	Met	Ala	Gly	Ile	Pro	Asn	Gln	Val	Val	Glu	Thr	Ala
1140					1025					1030				1035
														1040

RAW SEQUENCE LISTING

DATE: 11/22/2002

PATENT APPLICATION: US/09/529,239C

TIME: 09:49:19

Input Set : N:\Crf4\11122002\I529239B.raw

Output Set: N:\CRF4\11222002\I529239C.raw

1141	Ala	Ala	Gln	Ala	Met	Lys	Arg	Ser	Ile	Gly	Glu	Asn	Phe	Lys	Ser	Ser
1142					1045					1050					1055	
1143	Glu	Leu	Arg	Ser	Glu	Phe	Ser	Ser	Leu	His	Glu	Asp	Trp	Leu	Lys	Ser
1144					1060					1065					1070	
1145	Leu	Val	Gly	Ile	Ser	Arg	Val	Ala	His	Asn	Asn	Ala	Pro	Ile	Gly	Glu
1146					1075					1080					1085	
1147	Asp	Asp	Tyr	Asp	Thr	Leu	Phe	Cys	Leu	Trp	His	Glu	Ile	Lys	Ser	Ser
1148					1090					1095					1100	
1149	Tyr	Cys	Val	Pro	Lys											
1150					1105											

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 11/22/2002
PATENT APPLICATION: US/09/529,239C TIME: 09:49:20

Input Set : N:\Crf4\11122002\I529239B.raw
Output Set: N:\CRF4\11222002\I529239C.raw

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:1; Line(s) 30
Seq#:2; Line(s) 53
Seq#:3; Line(s) 68
Seq#:4; Line(s) 78
Seq#:5; Line(s) 88
Seq#:6; Line(s) 98
Seq#:7; Line(s) 108
Seq#:8; Line(s) 118
Seq#:9; Line(s) 128
Seq#:10; Line(s) 138
Seq#:11; Line(s) 148
Seq#:12; Line(s) 175,176,177,178
Seq#:13; Line(s) 186
Seq#:14; Line(s) 196
Seq#:15; Line(s) 223,224,225,226,227,228,229,230,231,232,233,234,235,236
Seq#:15; Line(s) 237,238,239,240,241
Seq#:16; Line(s) 249
Seq#:17; Line(s) 259
Seq#:18; Line(s) 271,479,480
Seq#:20; Line(s) 631
Seq#:21; Line(s) 641
Seq#:22; Line(s) 650
Seq#:23; Line(s) 660
Seq#:24; Line(s) 670
Seq#:25; Line(s) 680
Seq#:26; Line(s) 707,708,709,710,711,712,713,714,715,716,717,718,719,720
Seq#:26; Line(s) 721,722,723,724,725,726,727
Seq#:27; Line(s) 751,752,753,754,755,756,757
Seq#:28; Line(s) 765
Seq#:29; Line(s) 775
Seq#:30; Line(s) 787,1001,1002
Seq#:32; Line(s) 1157
Seq#:33; Line(s) 1166
Seq#:34; Line(s) 1175
Seq#:35; Line(s) 1185
Seq#:36; Line(s) 1195
Seq#:37; Line(s) 1205
Seq#:38; Line(s) 1215
Seq#:39; Line(s) 1225
Seq#:40; Line(s) 1235
Seq#:41; Line(s) 1245
Seq#:42; Line(s) 1255
Seq#:43; Line(s) 1265

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 11/22/2002
PATENT APPLICATION: US/09/529,239C TIME: 09:49:20

Input Set : N:\Crf4\11122002\I529239B.raw
Output Set: N:\CRF4\11222002\I529239C.raw

Seq#:44; Line(s) 1275
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Seq#:46; Line(s) 1295
Seq#:47; Line(s) 1305
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Seq#:49; Line(s) 1325
Seq#:50; Line(s) 1335
Seq#:51; Line(s) 1345
Seq#:52; Line(s) 1355
Seq#:53; Line(s) 1365
Seq#:54; Line(s) 1375
Seq#:55; Line(s) 1385
Seq#:56; Line(s) 1395
Seq#:57; Line(s) 1405
Seq#:58; Line(s) 1415
Seq#:59; Line(s) 1425
Seq#:60; Line(s) 1435
Seq#:61; Line(s) 1445
Seq#:62; Line(s) 1455
Seq#:63; Line(s) 1465
Seq#:64; Line(s) 1475
Seq#:65; Line(s) 1485
Seq#:66; Line(s) 1495
Seq#:67; Line(s) 1505
Seq#:68; Line(s) 1515
Seq#:69; Line(s) 1525
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Seq#:72; Line(s) 1555
Seq#:73; Line(s) 1565
Seq#:74; Line(s) 1575
Seq#:75; Line(s) 1585
Seq#:76; Line(s) 1595
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Seq#:81; Line(s) 1645
Seq#:82; Line(s) 1655
Seq#:83; Line(s) 1665
Seq#:84; Line(s) 1675
Seq#:85; Line(s) 1685
Seq#:86; Line(s) 1695
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Seq#:89; Line(s) 1725
Seq#:90; Line(s) 1735
Seq#:91; Line(s) 1745
Seq#:92; Line(s) 1755

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 11/22/2002
PATENT APPLICATION: US/09/529,239C TIME: 09:49:20

Input Set : N:\Crf4\11122002\I529239B.raw
Output Set: N:\CRF4\11222002\I529239C.raw

Seq#:93; Line(s) 1765
Seq#:94; Line(s) 1775
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Seq#:96; Line(s) 1795
Seq#:97; Line(s) 1805
Seq#:98; Line(s) 1833,1834,1835,1836,1837,1838,1839,1840,1841,1842,1843
Seq#:98; Line(s) 1844,1845,1846,1847,1848,1849,1850,1851,1852,1853,1854
Seq#:98; Line(s) 1855,1856,1857,1858,1859,1860,1861,1862,1863,1864,1865
Seq#:98; Line(s) 1866,1867,1868,1869,1870,1871,1872,1873,1874,1875,1876
Seq#:98; Line(s) 1877,1878,1879,1880,1881,1882,1883,1884,1885,1886,1887
Seq#:98; Line(s) 1888,1889,1890,1891,1892,1893,1894,1895,1896,1897,1898
Seq#:98; Line(s) 1899,1900,1901,1902,1903,1904,1905,1906,1907,1908,1909
Seq#:98; Line(s) 1910,1911,1912,1913,1914,1915,1916,1917,1918,1919,1920
Seq#:98; Line(s) 1921,1922,1923,1924,1925,1926,1927,1928,1929,1930,1931
Seq#:98; Line(s) 1932,1933,1934,1935,1936,1937,1938,1939,1940,1941,1942
Seq#:98; Line(s) 1943,1944,1945,1946,1947,1948,1949,1950

VERIFICATION SUMMARY

DATE: 11/22/2002

PATENT APPLICATION: US/09/529,239C

TIME: 09:49:20

Input Set : N:\Crf4\11122002\I529239B.raw

Output Set: N:\CRF4\11222002\I529239C.raw

L:7 M:270 C: Current Application Number differs, Wrong Format
L:38 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
L:61 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
L:158 M:200 E: Mandatory Header Field missing, <220> Tag not found for SEQ ID#:12
L:206 M:200 E: Mandatory Header Field missing, <220> Tag not found for SEQ ID#:15
L:488 M:200 E: Mandatory Header Field missing, <220> Tag not found for SEQ ID#:19
L:690 M:200 E: Mandatory Header Field missing, <220> Tag not found for SEQ ID#:26
L:734 M:200 E: Mandatory Header Field missing, <220> Tag not found for SEQ ID#:27
L:1010 M:200 E: Mandatory Header Field missing, <220> Tag not found for SEQ ID#:31